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the new gas is one hundred times that of hydrogen, or, at 32° F. temperature, more than one hundred and five miles per second. "At anything like this molecular velocity, it would be quite impossible for a gas to remain in the atmosphere, unless the space above also contained it." And Professor Brush is inclined to believe that this is the case. We would have, therefore, in the form of this new gas an "interplanetary and interstellar atmosphere," which would account for the transmission of radiant energy through space, now attributed to the agency of the hypothetical ether.

It is hard to see how such a molecular medium can exist in space without offering sufficient resistance to the motions of celestial bodies to be detected by observation. It is generally agreed among astronomers that no evidence of such a resisting medium has been found hitherto, though certain cometary phenomena have led a few to suspect its existence.

Professor Brush's discovery, if confirmed, is evidently as important to astronomers as to chemists, and further results will be awaited with interest.

R. G. AITKEN.

November 2, 1898.

PHOTOGRAPHS OF COMET i 1898 (BROOKS).

The comet discovered by Mr. Brooks, on October 20th, was photographed with the Crossley 3-foot reflector on eleven consecutive nights—from November 4th to November 14th, inclusive—with exposures varying from four minutes to somewhat over one hour.

On the best photographs, taken on November 5th with an exposure of 1^h 10^m , the extreme diameter of the coma is 0.25 inch = 4'.1. A very narrow, straight tail extends from the center of the head to a distance of 1.4 inches, or 23'. In appearance, the comet closely resembles Comet b 1894 (Gale), as photographed by Barnard. The tail could not be seen with the large telescopes of the Observatory.

There is evidence on one of the plates that the nucleus of the comet was divided into two distinct masses on November 10th. As the guiding of the telescope was imperfect, it is not possible to speak positively on this point. At present, the Crossley reflector is provided with no better arrangement for guiding (in the case of a comet), than a 4-inch finder of $8\frac{1}{2}$ feet focal length, attached to one corner of the main telescope tube. A study of

the star-trails on the same plate makes it fairly certain that the observed division of the nucleus was real. A more detailed account of these observations will be printed in the *Astrophysical Journal*.

An excellent photograph of the comet was obtained on the night of November 3d, by Mr. H. K. Palmer, with the Will-Lard 6-inch portrait-lens. It resembles closely the photographs taken with the 3-foot reflector, though the scale is, of course, very much smaller. The straight, narrow tail can be traced to a distance of about 45'.

J. E. K.

ERRATUM.

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